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ABSTRACT

The rural areas in the world are experiencing an identity crisis: for example, in France some areas are losing population, while those that are growing find that the population is changing from agricultural workers to retired persons and blue-collar and white-collar employees. This report, which summarizes discussion at a recent Organisation for Economic Cooperation and Development (OECD) seminar, examines some of the strategies available for redefining the role of schools in changing rural areas. Since rural areas vary considerably, it is impossible to establish a norm for a model school, yet some general points include the need to make decisions in light of children's academic future on the one hand, while, on the other hand, considering the school's role in local development and in the broad debate on revitalizing rural areas. Instead of proposals for a rigid model system, what is needed is consideration, at the site level, of the objectives of each school group. OECD countries seem determined to provide pupils with diverse but genuine solutions, including cooperation, clustering, and the use of new technologies to relieve the isolation of rural schools while expanding the range of social services they provide to their communities. Sections of this report focus on various approaches related to (1) maintenance of small schools versus mergers; (2) school role in meeting student needs and in community development; (3) architectual design of rural schools; and (4) financial considerations in school size, transportation, and new technologies. (TD)

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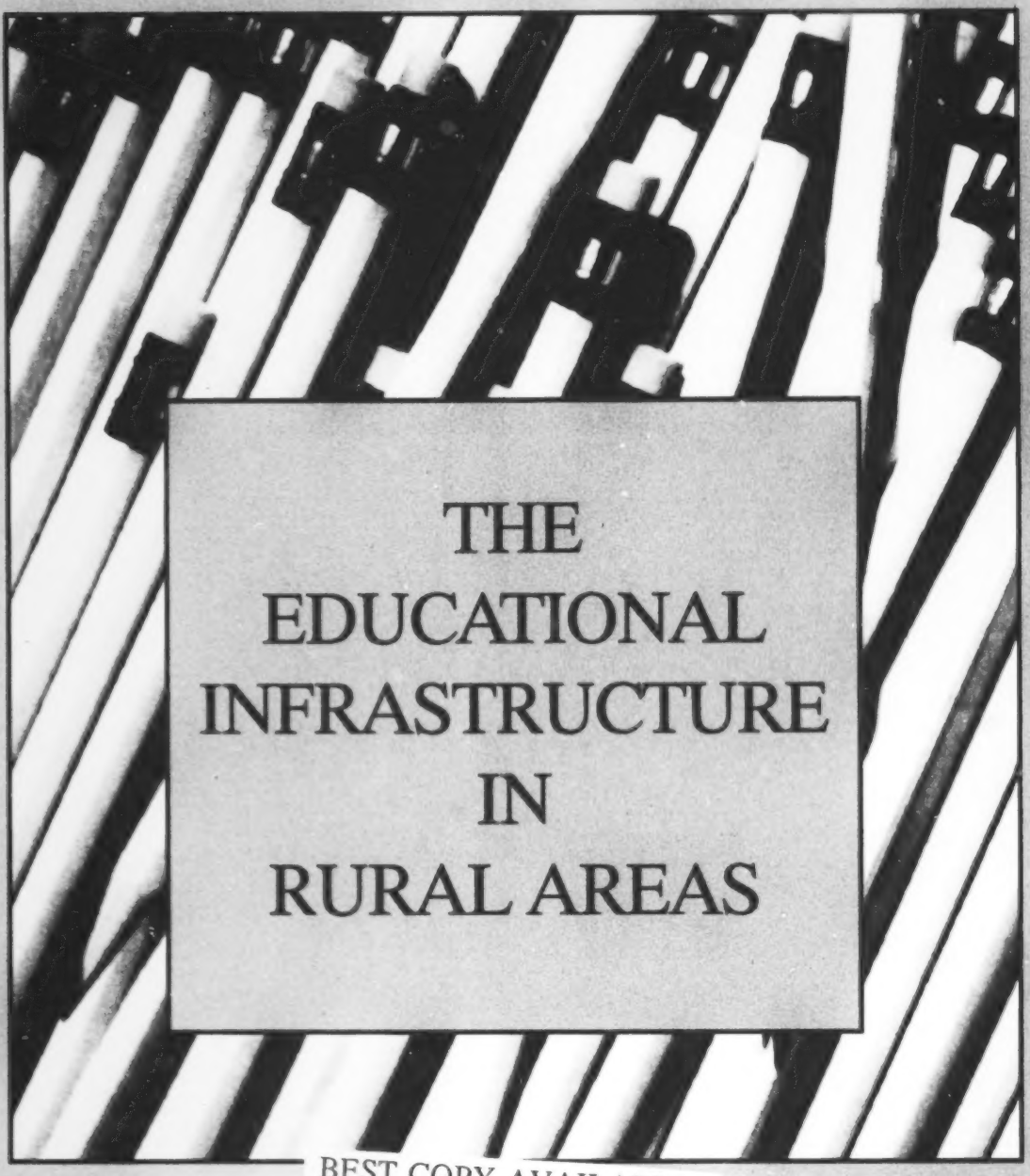

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The present report summarises the results of the Programme's recent work on the educational infrastructure in rural areas, drawing in particular on the proceedings of an international seminar held in Bütgenbach, Belgium, in May 1993. The author, Martine Safra, was Director of local education services at the "Inspection académique" in Vesoul, France, and is currently working at the French Ministry of National Education. The ideas expressed are based on the discussions held at the PEB seminar mentioned above and do not necessarily represent those of the authorities concerned or the OECD.

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INTRODUCTION

The educational infrastructure in rural areas — theme of the 1993 PEB seminar — has been for a quarter of a century now the subject of reflection and debate, and frequently a sensitive political issue. Local newspaper headlines often reflect this; in May 1992 a Swiss, French-language newspaper ran an article headed "Regions fight school closures", and the French review *Pédagogie et Education* asked: "Small schools are closing. Why? How will this affect the children?"

The rural community of Norrtälje in Sweden concludes its description of the area's schools with a call to keep the smaller schools open: "Small schools have great opportunities to hold their own in comparison with large schools, and they often provide a stable social environment whilst being able to stimulate the development of pupils".

In France, the annual allocation of primary-education teaching posts is a recurrent source of anguish. Pressure groups are set up, such as the National Association of Elected Officials in Mountainous Areas, which publishes a leaflet on how to obtain a reversal of the Education Ministry's decisions to close schools. School closures are often seen as responsible for the depopulation of the countryside.

This widespread concern with the changes threatening traditional rural life stems, in part at least, from the demographic, social and economic developments taking place in OECD countries. Between the end of World War II and 1975, the urban population rose sharply and predominantly rural countries became predominantly urban ones. Between 1950 and 1974/75, for instance, the urban population in Finland rose from 32 to 58 per cent of the total, while in Switzerland and Greece it rose from 37 to 57 per cent. Even countries that are still largely rural have seen a sharp rise in the number of city dwellers. Those that were already well urbanised by 1950 have also seen their urban population increase still further. In Canada, the urban population rose from 52 to 76 per cent, and in the Federal Republic of Germany, from 72 to 83 per cent.

Over the past ten years, however, the trend has either been levelling out or has even reversed, and the traditional idea of an exodus from the countryside, which comes up in nearly every discussion, now has to be qualified. In France, for example, between the 1982 and the 1990 censuses, the number of inhabitants in rural communes rose by seven per cent. In England and Wales the population of remote, mainly rural districts increased by 10.8 per cent over a ten-year period, while in Italy the population of rural communes rose by 2.8 per cent in the 1980s, with mountainous areas regaining the population they had lost in the previous decade.

This revival of rural dwellings, however, masks sharply contrasting situations between areas that are holding up very well and others that are declining rapidly. European policies concerning the most disadvantaged regions attempt to address the problems stemming from these contrasts.

In France, 60 per cent of rural communes are growing, but the 40 per cent that are declining are all in larger areas which are facing a more general crisis. What seems to be happening is that, in the more attractive regions, more and more people are being drawn to the rural areas around the urban centres, while

communes situated deep in the countryside, outside what are termed industrial/urban settlement zones, are stagnating or declining, often to an alarming degree. The predominant feature, as far as settlement patterns are concerned, is no longer a split between town and country but the disparity between regions. In France, for instance, it is the isolated farming regions (such as the Creuse, Cantal and Lozère departments) and the areas hardest hit by the industrial crisis (particularly in eastern France) that are in marked decline.

A recent DATAR study found that the gap is widening between the regions that are expanding and the rural areas hardest hit.[1] The most vulnerable cantons appear to be those that are isolated, with a predominant but declining agricultural sector, weakness in other sectors and consequently a sharply declining population.

This contrasts strongly with the fringes of the Ile-de-France region, coastal areas and the south-eastern corner of the country, where the population is rising sharply, often more in rural than in urban communes. [2]

This upward trend has been accompanied by a change in the make-up of the population. Agricultural employment is falling sharply with the decline of the family farm and the rise of large, mechanised holdings, and small rural towns are becoming increasingly residential in character. Increased mobility has resulted in a dissociation of home and place of employment, with people living sometimes 20, 30 or even 50 kilometres from their workplace. In France today, farming households make up only ten per cent of the rural population, while the proportion of retired persons, blue-collar and white-collar employees is increasing.

The rapid changes that are taking place in rural areas call for foresight and planning as far as school resources are concerned. This applies not only to declining areas where there is a question as to whether a school is viable or, on the other hand, whether it could help in keeping the village alive, but also to rural areas where the population is changing and expecting and demanding more from its schools.

1. *Essai de typologie socioéconomique des cantons français*. Joint report by DATAR (Délégation à l'Aménagement du Territoire et à l'Action Régionale) and the SEGESA (Société d'études géographiques, économiques et sociales appliquées). Paris, May 1993.

2. J.C. Bontron. "La reprise démographique confirmée", in *Naissance de nouvelles campagnes*. Paris, DATAR, 1993.

SCHOOL-SYSTEM ORGANISATION

Compulsory schooling, in most cases for a period of at least nine years, is the rule in all OECD countries. However, it transpires from country reports that, while virtually all children of school age receive an education, there are some that do not, these being mostly small minority groups (such as the Maoris in New Zealand and the Aborigines in Australia) and children in economically less-developed rural areas.

Beyond these few exceptions, OECD countries in general have adopted a number of basic strategies for educating the young in rural areas:

- teaching children in small schools, which are sometimes networked;
- merging schools to form complexes of up to 200 pupils and sometimes more;
- distance learning employing a variety of different technologies.

A few examples will help to illustrate these different approaches.

Small schools

The approach most commonly used in OECD countries is the small school, employing one to three teachers:

- In Scotland in 1991, out of 2 364 schools, 533 (or 23 per cent) had 50 pupils or less.[1]
- In Norway in 1988, approximately 40 per cent of primary schools had less than one class per grade, and 69 schools had fewer than six pupils.[2]
- In Portugal, 80 per cent of children attended schools with only one or two classes in 1981. Although less marked now, the trend still persists: in 1990, 5 845 of the country's 9 562 schools (or 61 per cent) had 50 pupils or less.[3]

Other cases were cited during the PEB seminar. Austria provided a very unusual example: in the canton of Lienz in the East Tyrol, 29 out of 46 primary schools have classes with more than one grade, including nine which are schools with a single class combining all grades. The reasons for this is the topography of the region, which consists of plateaux separated by deep valleys with in consequence only a few scattered communities, mostly isolated farmsteads or small hamlets (see box, page 14). Similar situations can be found in the insular areas of Greece and northern Europe.

But the small-school solution is not by any means confined to isolated areas. Structures of this kind can be found almost everywhere, for example in the mediterranean countries, in Spain or in Portugal, where the main reason for maintaining small schools appears to be parents' unwillingness to have their children travel on school transport.

Mergers

Much larger school complexes serving several communities can also be found in OECD countries. Sweden, for example, has schools catering for the first two cycles of compulsory schooling (up to the age of 12) with between 90 and 100 children from quite a large catchment area. Similarly, a rural school in Quebec generally caters for between 200 and 250 pupils who travel in to school every day, winter

and summer alike. In Quebec, small schools are to be found only in the Cree Indian or the Inuit communities in the far north, or in areas where the population is falling sharply. In Turkey too, plans to build large school centres serving a wide catchment area are being considered.

In some cases the merger is the result of recent change, such as the closing of a village school which has led to the children having to travel to the next closest village school, or, for pedagogical reasons, or in order to rationalise costs following population decline, volutary mergers were organised.

In Germany, for instance, in the Rhineland-Palatinate, schools began to merge in the 1960s and the process quickened from the mid-1970s onwards owing to the decline in the population. The aim was to set up single-grade classes, the idea being that this would make it easier to monitor individual pupils. The school in Bleialf has 240 pupils from 12 different districts in a catchment area of 140 square kilometres. However, school transport routes have been organised on a "hub and spoke" basis despite the cost (see page 22) to avoid children having to travel more than 15 kilometres. The local education authorities consider this as a maximum distance to be traveled (the longest journey time for any child being 20-25 minutes).

In Greece, each community with more than seven children of primary-school age has the right to have its own school. In addition, with more than 6 000 villages and over 100 inhabited islands, the country continues to maintain for various reasons a number of schools with fewer than seven children. Nevertheless, the number of small schools in Greece is falling. Each year, as pupil numbers decline, 80 to 100 small schools disappear following mergers with neighbouring institutions. The decision to merge is taken by the local authority; assistance with transport costs for those who have to travel further is offered by the State. Between 1979/80 and 1991/92 the number of schools with one, two or three classes dropped from 6 267 to 4 309.[4]

Between the small school and the large complex, there are a number of intermediate solutions. An article in the December 1984 issue of *La Lettre* of the *Fondation rurale de Wallonie* (a newsletter published in the Walloon area of Belgium) listed the different characteristics widely recognised as the advantages and disadvantages of rural schools. Among the advantages were the children's impression of freedom, their feeling that they were getting individual attention, easier contact with other pupils and also the importance of the "teacher effect"; the disadvantages mentioned included isolation, limited social variety, lack of equipment and resources, and lack of out-of-school services. Whatever the merits of these arguments — it would not be feasible here to discuss all the research carried out on the success of various types of schools — they are nevertheless widely accepted and have led to a search for solutions to keep small schools open and remedy their more serious defects.

Several solutions have been adopted, all of them based on some form of school network.

Networks

Schools in Switzerland, as well as in France, have been merged so that each village keeps its school, but the children attend school in a particular village depending on their age. This avoids multi-level classes without subjecting these villages to the trauma of seeing the school close.

In other cases, the children attend their village school but links are developed between schools, such as having specialised teachers travel from school to school. In Belgium's German-speaking community, for instance, the commune of Burghenland has kept most of its small schools open, but French is taught by peripatetic teachers serving several schools each. Similarly, Spanish classes are taught by

France: a combination of approaches

France has 8 084 rural communes (22 per cent of the national total of communes) with over 120 000 children of primary school age (2 per cent of the total). The peri-urban areas have 21 per cent of all children, and the towns and cities 77 per cent.

The education infrastructure in rural areas, and even in the peri-urban ones, is marked by a predominance of small schools: 36 per cent of French schools (or 13 351 schools) have only one or two classes, and cater for 9 per cent of children of primary-school age.

There are relatively few schools with very small enrolments: 13 have from one to five pupils, 193 have from six to eight, and 8 300 have nine or more. In many cases, single-class schools are part of an intercommunal network, the *Regroupement pédagogique intercommunal* (RPI): of the 8 506 single-class schools, around 5 000 belong to a group of this kind. This means that the remaining 3 500 have a single class for children of all levels, from age five (and sometimes four in special cases) to age 11. Everywhere else, the individual villages in the RPI group still have a school, with one or two classes. For instance, one village may have the kindergarten classes, another the children aged six to eight, and a third the oldest children. This arrangement may, however, be changed from one year to another. To establish an RPI network, the communes have to be prepared to work together under a formal agreement.

These arrangements, which have become much more widespread since the early 1970s, have generally been welcomed as a way of preserving the village school, while avoiding a return to the single-class system which is increasingly difficult to staff. It does however have its drawbacks. It revolves around a series of small schools that are expensive to keep up, with little scope for introducing a full range of teaching aids and equipment or for the teachers to work together. Furthermore, the separation of pupils by age-groups means that they lose the benefits of mixing with younger or older children.

In the 1980s another type of structure emerged: the intercommunal school complex (ISC) on a single site comprising a kindergarten and several primary classes for children from the surrounding area. For the local authorities concerned this means taking the bold decision of closing their own schools and assuming a share of what is a considerable capital outlay. In some cases, for example in the Marne *département*, the *Conseil Général*, or departmental council, has supported this type of operation by making a substantial grant towards the building of the new school. In such instances, central government will often undertake to maintain a specific number of teaching posts for a number of years.

This is in fact the embryo of a contractual policy between the various interested parties, involving as it does a combination of regional development and education policy. A merger of this kind is seen as allowing provision of the necessary education facilities (library, documentation centre, computers, for instance) and ancillary services (daycare outside school hours and a midday meal). The aim is to maintain what would still be a village school for children who otherwise are increasingly being obliged to attend a school in town, and to make this school attractive by drawing on the traditional advantages of rural schools while at the same time providing the usual range of services found in urban areas.

Of course, this approach should not be adopted in declining areas where it would clearly be very unwise to encourage local authorities to burden themselves with a capital outlay of this magnitude. In peri-urban areas, however, it is one way of keeping rural schools in existence and stabilizing the population around a number of centres offering the services people have come to expect.

peripatetic teachers in the Greater Nelson County Consortium schools in North Dakota, USA.

Of the 144 schools in Northumberland, a county in the north of England, 53 have 70 pupils or less and nine schools have 20 pupils or less. To combat isolation, each rural school has been linked to the nearest four other small schools to form a network. Each network shares a peripatetic teacher who disseminates specialist teaching skills and materials among the schools.

In Spain, a number of small schools are linked by a mobile service and communications equipment to a central school that can accommodate large groups of up to 150 pupils and offers special facilities (sports amenities, documentation centre, for example). Classes travel regularly to the central school, giving the children a chance to mix with others and have access to specialist teaching.

Teaching at a distance

For 15 or so years a distance-learning system called Telescola was tried out in Portugal, targeting rural areas in particular. It was aimed mainly at children in the preparatory cycle, the two-year cycle which follows the four years of primary schooling and which has been compulsory since 1968.

The class for each grade had to have at least seven pupils (a minimum of 14 pupils for the cycle as a whole) in normally equipped classrooms. Telescola consisted of televised lessons given by a teacher and supervised in the classroom by a monitor who was responsible for ensuring the required follow-up to each teaching sequence.

Although it is not easy to measure the pedagogical impact as pupils did not follow the same curriculum or sit the same examinations as those in urban areas, the experiment was felt to be successful in providing children from the most backward areas with the requisite preparatory-cycle education.

A similar experiment was carried out in South Dakota where 14 rural schools had the opportunity to offer advanced classes in mathematics and science thanks to the help of the University of South Dakota and class sessions recorded on video cassettes, backed up by local teachers and university professors.

In Norway, telecommunications links and computers are used so that a full curriculum can be maintained at small secondary schools in sparsely populated areas, and so that teachers can teach in several schools at the same time.

Distance teaching can also provide a means for keeping small rural schools from closing down.

Both Australia and Scotland are making use of their telecommunications networks for the provision of specialist teaching to small schools in remote areas, which might otherwise have to close. In each case the system depends on a teacher at one school using an electronic white-board, computer-generated data and graphics and sound to provide teaching over a fully interactive (audio and graphics) link with students in the distant schools; the students use small writing tablets for graphic interaction as well as microphones for normal speech contact.

Distance teaching can be of considerable help to isolated areas. It would seem, however, that to be entirely effective, on-site guidance and support from teachers or other staff is needed.

Adr ıistrative concerns

Approaches of every kind can be found in OECD countries, influenced not so much by geographical constraints — "harsh winter weather", for instance, does not have the same meaning in Quebec and the Tyrol — as by their history, and their cultural and political philosophies.

The political and administrative organisation of a country has implications for rural schools. Educational planning is facilitated by communal networks which are large enough to allow the communal authorities to exercise broad control over school arrangements.

In France, responsibility for schools is shared between the central government, which controls teaching and teachers, and the local authorities, responsible for school buildings and their operation. It should be noted that France has 36 000 local authorities (communes), and co-operation among them is not always easy to arrange. As a result, it is by no means easy to apply consistent planning over a sufficiently large area, since any change entails lengthy negotiations with numerous individuals and institutions.

In Sweden the local authorities have very broad powers, including education. The size of these territorial units (there are now only 286 local authorities in Sweden) accordingly facilitates educational planning.

Primary schools are where most of the problems and challenges arise, but this should not be allowed to mask the importance of secondary schools to the future of rural areas.

Secondary education

Although the choice between small schools and mergers applies at all levels in rural areas, the secondary-school situation is harder to analyse from the viewpoint of OECD countries as a whole, owing to the fact that streaming occurs at different levels. Moreover, the term "small school" does not mean the same thing in general education as it does in vocational education, which requires a very different type of infrastructure. The distinction between compulsory and post-compulsory education is also becoming less pertinent in OECD countries given the ever higher rates of students continuing their studies beyond compulsory education.

When it comes to serving their pupils, the question of the quality of the service rendered is just as crucial in secondary schools as it is in primary schools. Small schools — usually considered as those with fewer than 100 pupils — are still very common. Providing necessary equipment is of course a problem, but so is staffing. As soon as a school is required to teach specialised subjects or groups of subjects, it will find it hard to offer teachers a full timetable and keep them on.

Even more worrying is the apparent correlation between enrolment in further education and the type of school pupils attend: pupils who began their secondary education in a small school are less likely to go on to higher education. The reasons for this are certainly very complex, and may well include social pressures and remoteness from centres of post-secondary education. When asked about this, many teachers give the same reply, namely that parents and pupils lack ambition. While this may be true, the school system itself cannot be absolved from all responsibility at a time when it is becoming more and more difficult for the young to find employment in the industrialised countries of the world.

When pathways diverge, be it at the age of 12 as in Germany and Luxembourg, at around 14 or 15 as in Portugal, the Netherlands and Greece, or later still, the problem of school infrastructure takes on a different character. Often the parents' choice will be swayed by the proximity rather than the suitability of a school from a vocational point of view.

Yet many rural schools still correspond to the economic and vocational structures of a half-a-century ago, and the vocational courses most commonly on offer do not necessarily match the requirements of tomorrow's labour market.

The distinction between primary and secondary education is not always relevant. It may be blurred in the more remote areas where primary and lower-secondary schools are often

The example of Tyrol, Austria

Responsibility for education in Austria is divided between federal and provincial level. The federal authorities are responsible for the curriculum at all levels, for the provision of facilities for academic secondary, intermediate and higher vocational schools, and for special education; the provincial authorities are generally responsible for elementary schools, and other secondary schools, including vocational schools.

East Tyrol is one of the nine administrative districts of the Tyrol Province. It is a self-contained mountain district of 2 020 square kilometres. The district's 33 local communities are found not only in the valleys but also on the south-facing mountain slopes up to 1 500 metres; there are also some small permanent settlements even higher in the alpine pastures. There are a large number of hamlets and isolated farms. In winter, outlying settlements are frequently cut off from the towns.

The district's population grew from 38 000 in 1951 to more than 48 000 in 1991. The highest growth rates were not in the district centre, Lienz, which now has just under 12 000 inhabitants, but in some of the communities situated in the Lienz basin. Despite this overall growth, the population has dropped, sometimes markedly, in 11 communities since 1981. The Austrian Institute for Regional Planning expects pupil numbers in compulsory schools to decline by 4 per cent between 1986 and 2011.

In the 1950s East Tyrol had 60 primary schools in its 33 communities. Forty-six of these still exist, but since a reorganisation in 1979, only the first four years of compulsory education are taught in primary schools. Fifth-grade pupils (age 10) move on either to compulsory four-year secondary education or to one of several different types of academic secondary school. The Lienz district has nine compulsory secondary schools, and there are four academic secondary schools, all of which are situated in the district centre.

Of the 46 primary schools, only 17 have four or more classes. In the remaining 29, classes cover two ore more grades: 9 are three-class schools, 11 are two-class schools and 9 are single-class schools.

The greatest asset of the single-room primary school, close to home, is felt to be that the children are able to remain in contact with family and village life. The strength of the small village schools had led legislators to try out a special kind of compulsory secondary school in the district. Naturally, it is not possible for every small community to have a secondary school, but in two communities a special 'mini-secondary school' has been created. Many pupils prefer to receive secondary education at these 'mini' schools, rather than travel long distances to the nearest academic secondary school. In 1991-92, 101 pupils in five classes attended the school in St. Jakob in Defreggen, and 62 pupils in four classes attended the Kals/Großglockner school.

housed together, with the whole complex still being relatively small, but avoiding the situation where the children have to make long journeys. The same is true in countries where schools are designed from the outset as large school centres, as in Turkey which in 1992/93 had 218 regional schools with 64 573 boarders — an average of nearly 550 pupils per school — for the five years of primary and the three years of lower-secondary education.

1. Campbell, Peter J. "Education in Rural Scotland, 1967-1992", *INTERSKOLA 25: Rural Education in an International Perspective*. Bodø, Norway, Central Government Office in Nordland, 1993.
2. "Reviews of National Policies for Education in Norway: Report to OECD". Norway, Royal Ministry of Cultrual and Scientific Affairs, Royal Ministry of Church and Education, 1988.
3. Sher, Jonathan, F. (ed.) *Rural Education in Urbanized Nations*. OECD/CERI Report, Boulder, Colorado, Westview Press, 1981.
4. "A brief exposé on rural schools in Greece". Ministry of Education, DIPEE, 1993. Paper presented to the seminar organised by PEB in Belgium in May 1993.

FUNCTIONS OF RURAL SCHOOLS

The functions of rural schools can be studied from two angles: those which are designed to meet the specific needs of the pupils, and those which concern the school's role in community development.

Pupils' needs

While some tend to focus on the need to halt rural depopulation by instilling in the younger generations a feeling of belonging to their region, most of the people who attended the PEB seminar felt that the young in rural areas belong to their region but also to a wider world, and that educational goals should be the same whether people live in the town or the country. This does not however preclude teaching methods based on children's experience and observation of their surroundings. At the school in Sart-lez-Spa,[1] in Belgium's German-speaking community, the teaching includes regular observation of the natural environment — the school has a vegetable garden, a pond, beehives, a weather station and small animals. Time is also spent on project activities. For example, the school staged a traditional crafts exhibition which succeeded in involving parents and the older members of the village community in the life of the school, while at the same time serving the more general cognitive, psychomotor, emotional and social goals of education as a whole.

While it is not suggested that overall learning goals are specific to rural schools, at the same time there is a growing demand for these schools to provide ancillary services. In particular, schools are having to cope with pupils at lunchtime, especially in peri-urban areas where parents are away from home throughout the day. This is also the case of course when schools have been merged and pupils have to travel long distances.

The provision of school meals is the rule in some countries, such as Sweden where they are free of charge. But this is not the case everywhere: in Quebec, for example, many pupils come to school with their lunch box; in France, school canteens are found in all secondary schools, but are only just beginning to appear in rural primary schools.

Boarding facilities are essential in the case of some rural secondary schools, and may also be required at the primary level in sparsely populated parts of countries where the financial burden of small schools is too great. Turkey, for instance, has opted for boarding schools in its underpopulated areas.

In many countries, however, there has been a marked decrease in boarding, owing to better systems of daily transport and a growing reluctance on the part of parents to send their children away to boarding school. Research is certainly needed into how boarding schools can adapt to the needs of children today. Some offer older children a campus-style arrangement catering for their every need, some have traditional dormitories with separate group-study rooms, while others have combined dormitories and study rooms, single rooms or rooms for two, three or four boarders. France's regional authorities, in charge of the construction and upkeep of the "lycées", are currently looking at possible improvements, but not necessarily single rooms; it would seem too that children of different ages have different needs.

As well as adapting to the demand for education, rural schools find that they are being

assigned other goals, either explicitly or in a somewhat less direct fashion, depending on the country.

The school's role in community development

Schools are often planned as an integrated complex, providing a service not only to children but to the entire population. In northern Sweden a new school complex is being built at Karesuando, in a very remote area. It is also designed to serve as a cultural centre, with a meeting hall for the use of nearby villages and a municipal library operating alongside the school library, a historical research centre and, during the holidays, a showroom for local arts and crafts (see illustration p. 30). The idea here is that schools in rural areas should be at the very heart of cultural development and provide a foundation for social unity.

This extension of the school's functions is not unusual in Sweden; many of the country's rural schools host a variety of activities. The local authorities in Norrtälje think it normal that schools should have not only nursery and primary classes but also after-school daycare and a municipal library, and that its premises should be used for a variety of purposes such as lectures, meetings, cultural events, adult education or sports activities.[2]

Greece too designs its school centres with meeting rooms for parents, facilities for adult education, a lending library and exhibition halls.

In Quebec, many schools provide a wide range of services for children outside school hours (including daycare before and after classes, at lunchtime and in the summer holidays) as part of a 1989 government policy which also provides grants. Similarly, the Education Act confers on school boards not only an educational mission but also responsibility for encouraging the use of school premises by public or community bodies within the area. School boards are empowered to draw up agreements with other school boards, educational institutions, municipal authorities or a community body within their own area to set up jointly or improve sports, cultural or leisure centres or playing fields. School facilities are accordingly being used by the community, thanks to the agreements between school boards and local partners.

In France, on the other hand, school premises are rarely used outside school hours, although this is explicitly provided for in the legislation. However, there have been signs of late in a number of regions that this situation is changing, with lower-secondary schools ("collèges") opening up to the public and offering a range of cultural and educational services. The college is becoming a centre of activities and injecting a little vitality into otherwise culturally deprived areas.

A new role for schools is gradually emerging: providing services to the community as a whole. This assumes even greater significance in economic terms when schools become centres of continuing education or when the vocational subjects taught there help to breathe life back into a particular sector.

Another example from Sweden is Gymo, a comprehensive school in a rural area that is, nonetheless, much more industrial than agricultural, which provides industrially-oriented vocational courses (metal-working, general mechanics, automotive mechanics). Adjoining the school is a technical centre (with its own administrative structure and budget) which serves as an adult training centre. The school's and the centre's equipment complement one another, with the centre possessing some sophisticated high-technology equipment. Some teachers work in both institutions and pupils have access to both workshops. Funded mainly by local firms, in particular the Sandvik steelworks, the technical centre is intended to meet local employers' requirements as regards further training and to generate exchanges between major companies and the

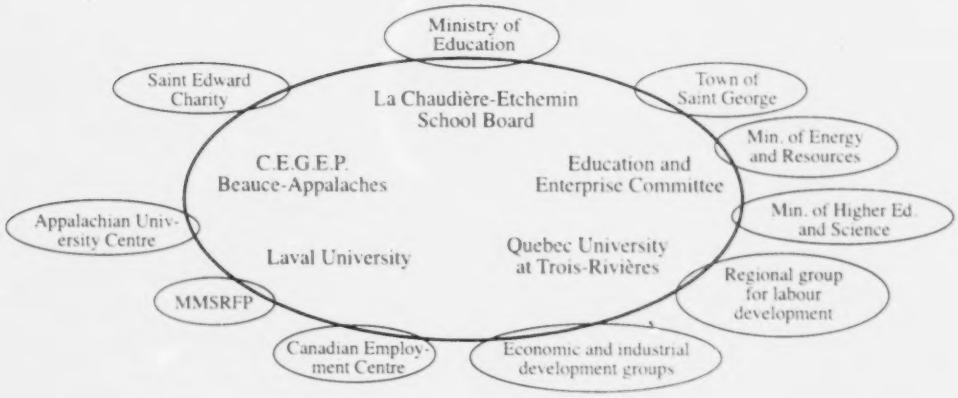
small and medium-sized businesses in the area. The school plays an important role in stabilizing and reinforcing the economic fabric, and initial training in turn derives benefits from its relations with the world of business and industry.

A more unusual situation is where the introduction of a course in a particular technology leads to the creation of firms and jobs. A case of this kind has been cited in France. Another case has been cited in Sweden where a school was set up in a remote area with the help of corporate funding: the Forsmarks school, specialising in energy technology and data processing, maintains that the location of the school may well have had something to do with the creation of a new firm some ten kilometres away.

A particularly interesting case in this respect is an initiative by the School Board of La Chaudière-Etchemin to provide firms with the basic technological know-how to ensure the survival of the industrial fabric in the Beauce and Chaudière-Appalache regions south of Quebec, between the Saint Lawrence River and the border with the United States.

Underlying the school board's proposals was the realisation that there was a serious need for initial and continuous training. The fact that the standard of education of the local population was below the average for Quebec and Canada as a whole, that small and medium-sized enterprises were lagging behind on technology, and that the vocational education curriculum was out-of-date prompted not only a revision of initial education but also the setting up of the *Centre Intégré de Mécanique Industrielle de la Chaudière* (CIMIC), an industrial engineering school. This latter project associated the School Board of La Chaudière-Etchemin, a general and vocational college and two universities, the whole being based on the work of an Education and Enterprise Committee and involving numerous other partners and participants.

CIMIC partners and participants



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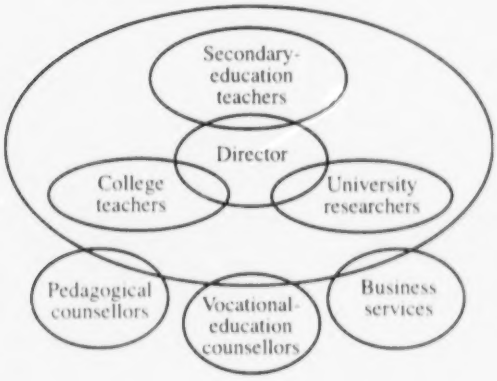
CIMIC human resources



The goals are ambitious: to provide specialist training for 85 workers, further training for some 500 workers, organisational support for businesses and the research and development services that they need.

This is a positive and practical approach towards revitalising industry in a rural area, and one that could well prove to be an important factor in regional planning and development.

1. For further details on the school in Sart-lez-Spa, see: Laurent, J. "En 1992, une école rurale ouverte sur la vie", *Education-Formation*. Belgium, September 1992.
2. For more information about the use of facilities outside school hours, see Hacker, M. "Using schools after class hours?", *OECD Observer*, No. 189, August-September 1994. PEB will soon be publishing a report on this subect as well.

FINANCIAL CONSIDERATIONS

Financial considerations are necessarily a key element in the debates and negotiations concerning planning and equipping the school infrastructure, and take on even greater weight when the availability of public funds is restricted.

Most OECD countries are currently facing budgetary constraints and are therefore looking for ways to control the costs of education. They are nonetheless mindful to maintain, and to improve, the quality of education. This in turn brings the cost/investment debate into the picture, with costs being set against investments in the young, in society and in the economy.

School size

It is difficult to measure the effect that the size of a school has on the overall costs of education. Several factors come into play:

- pupil or student/teacher ratios;
- the cost of the building and its equipment (libraries, laboratories, workshops, playgrounds...);
- running costs;
- school transportation costs;
- the costs related to ancillary services (boarding, catering, child minding).

The amount of influence that each of these factors will have varies considerably from one geographical or demographic context to the next. As regards primary education, where there are fewer factors with signficant effect, in-depth studies[1] of specific areas have shown that merging small structures does not necessarily lead to a decrease in the costs of education for the public authorities.

In order to take better account of local differences, the Dutch government has adopted a variable-norm system for opening, closing and merging primary schools. For example, the norm for closing a school varies from 23 to 200 pupils, depending primarily on the population density of the area and the distance separating the school facing closure and the next nearest school. This policy, reflecting a consciousness of both the costs and the quality of education, can be summarised by the following phrase: "large schools if possible, small schools if needed".

It is hardly possible to determine what should be the optimum size of rural schools or what should be the figures for opening and closing these schools. Each case must be considered in its context, taking account of the actual and foreseeable situation, and all cost factors with significant effect — including such hidden costs as the increased fatigue, and possible learning difficulties, of the children who have to face daily school transportation.

School transportation

Most OECD countries have adopted a maximum journey time of 45 minutes, although longer periods are sometimes adopted in the more remote areas. And in winter, journeys can be longer than at other times of the year.

School buses are the most widespread mode of transportation, followed by private transportation (bicycle, car or simply on foot). Some children also use more unconventional means, such as taxis, horses, boats, trains or skis.

School transportation is usually provided free of charge. In places where it cannot be arranged for technical reasons, most countries pay an allowance to parents. In some parts of the United States children who walk to school even receive a shoe allowance.

The difficulties are both numerous and real: children's schedules, journey time, increasing costs for the local authorities, and although there are thankfully few accidents, security. Norwegian studies on the effects of school transportation on children who must travel long distances have underlined the element of fatigue.

These means of transportation, or the allowances paid to make up for the lack thereof, are costly for the local authorities. The example cited earlier of the school in Bleialf, Germany, where school transportation costs 410 000 DM per year is a case at hand. However, there are also ways to reduce these costs. In Norrtälje, Sweden, for example, school transportation costs were reduced between 30 and 40 per cent by coordinating school hours with those of public transportation.

A few experiments have been carried out organising routes on a "hub and spoke" pattern to reduce journey time. It would seem that the most appropriate and least costly solutions are found when responsibility for organising school transportation is closest to the users.

New technologies

This topic merits a study of its own and cannot be treated exhaustively here. Nevertheless, a few main lines of thought can be pointed out, as can signficant examples of the use being made of new technologies. The use of CD-ROMs in resource centres can represent major gains for a small investment: one CD-ROM can contain the same amount of information as a 20-volume encyclopedia and cost a quarter of the price. Equipping small schools with the necessary equipment (the computer hardware and software) can pave the way to accessing a wide range of information. Other tools — fax, data-base or information networks — can help break the isolation of small schools.

In order to define a coherent group of policies, additional studies need to be carried out on the effects new technologies have on education in rural and sparsely populated areas, and on the conditions — access to equipment, type of equipment and its maintenance, teacher training — under which new technologies might improve the quality of education.

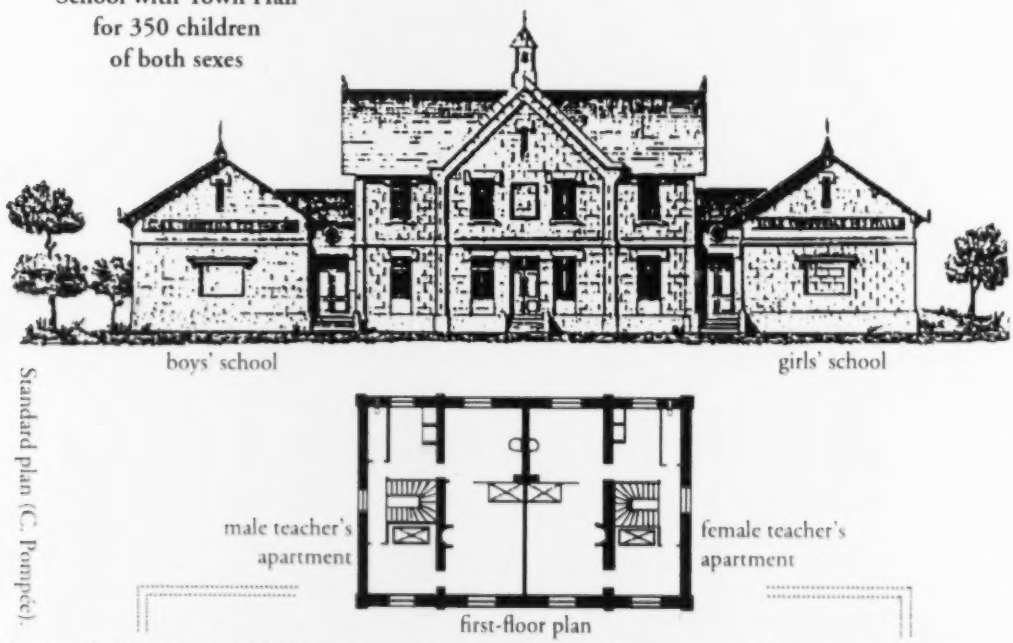
1. For detailed analyses of the financial considerations concerning the educational infrastructure in rural areas see: Mark Bray. *Are Small Schools the Answer? Cost-Effective Strategies for Rural School Provision.* London, The Commonwealth Secretariat, 1989. *Journal of Education Finance.* Vol. 16, Fall 1990, Nr. 2. Alain Mingat and Cédric Ogier. *Eléments pour une réflexion nouvelle sur l'école primaire en milieu rural.* Dijon, France, Institut Universitaire Professionnalisé de Dijon, 1993. Hanhart, S., et. al. *Projet de recherche sur les conséquences de la fermeture de petites écoles de village ou de montagne en Suisse romande.* Paper presented at the PEB seminar held in Belgium in May 1993.

DESIGN OF RURAL SCHOOLS

The design of a school naturally reflects the architectural styles in vogue when it was built, but it also reflects the popular perception of schools, their role in the community and their purpose. A few examples will illustrate this.

A study of school architecture, "La maison d'école : Histoire d'une Architecture"[1] published in France in 1991 by A. Dessertene and J.F. Rotasperti, contains an inventory of the school buildings in one of France's mainly rural *départements*, the Saône-et-Loire. It highlights the firm resolve of France's ministers of education throughout the 19th century to present local authorities with a set of standard designs. The purpose of this was of course to provide local authorities with much welcome technical help and avoid unnecessary expenditure, but at the same time it unconsciously reflected contemporary conceptions of the ideal school. In 1873, for example, a series of nine standard plans was published for schools with between 70 and 280 pupils. As a rule, the school and the town-hall were housed in the same building, as in the example below.

School with Town Hall for 350 children of both sexes



Standard plan (C. Pompée).

Source: A. Dessertene and J.F. Rotasperti. *La Maison d'école : Histoire d'une Architecture*. Macon, France, Ed. Groupe 71, 1991.

While these plans were not copied religiously — the architects modified them and incorporated some of their own ideas — the majority of schools did look very much alike. They were occasionally co-educational, but usually either separate schools[2] or with boys and girls housed in two separate wings of a structure comprising the town-hall, as well as accommodation for teaching staff. The school's requirements were therefore limited to a classroom plus accommodation for the teacher.

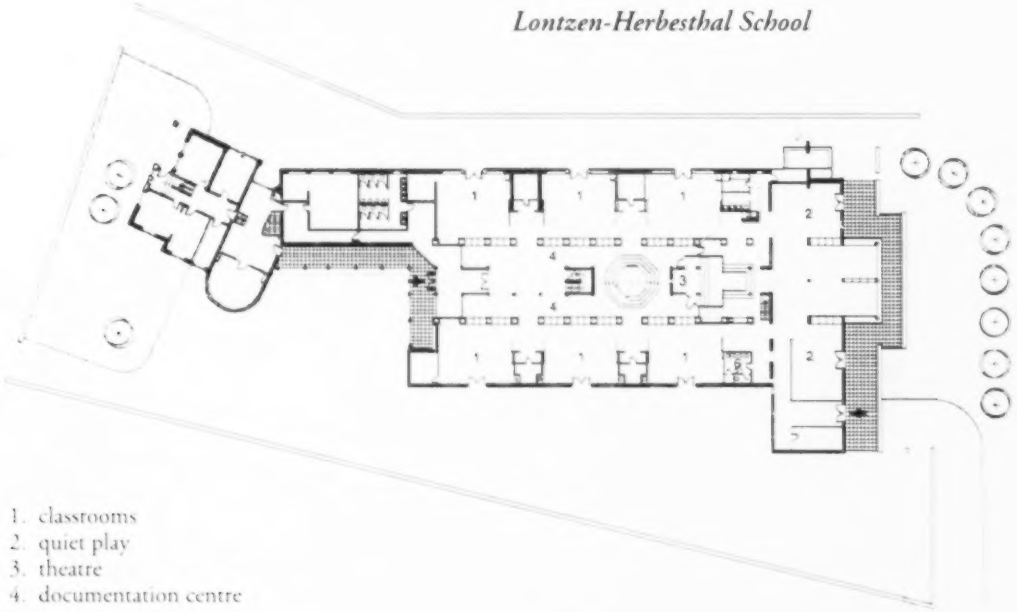
School architecture has been evolving rapidly since World War II. On the one hand, the school in Bleialf (visited by those who attended the PEB seminar) was built along traditional lines with long corridors opening onto identical classrooms. On the other hand, the schools of Belgium's German-speaking community, be they very small single-class ones like that in the Aldringen area or the large merged schools like those in Sart-lez-Spa, have been designed to serve well-defined and specific educational purposes.

In Sart-lez-Spa, for instance, the open-plan approach, so popular in the late 1960s, was retained. Its outdoor facilities have also been designed to meet the needs of environmentally oriented education.

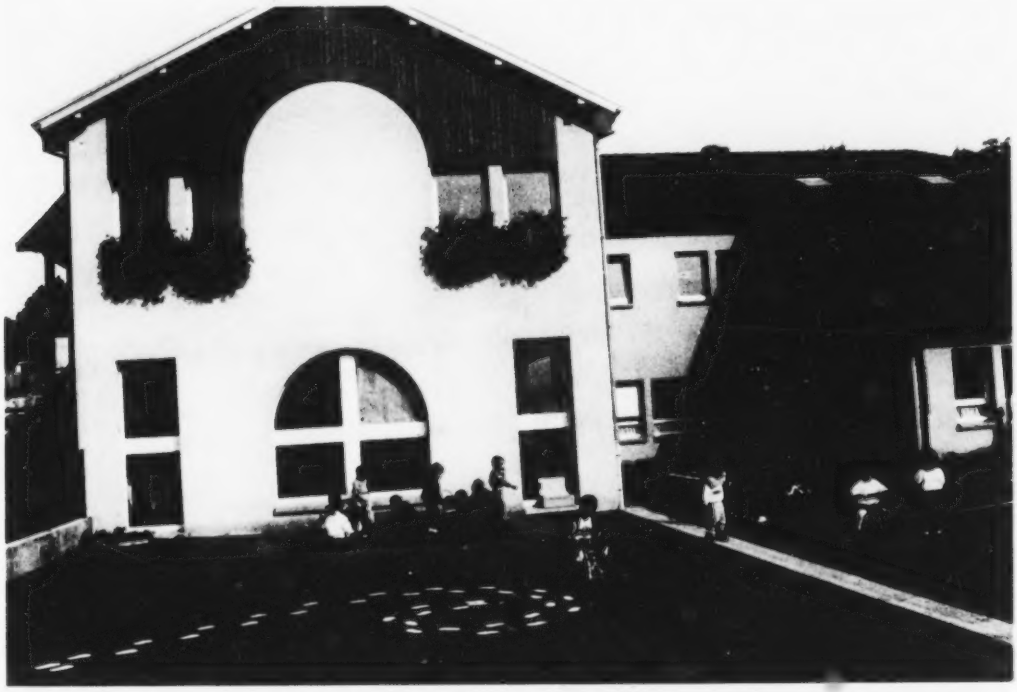
Schools in Belgium's German-speaking community generally allow a considerable amount of space for the documentation centre and various facilities for meetings and out-of-school activities. The school in Lontzen-Herbesthal is a good example (see plan).

Nowadays, almost all new school buildings reflect a clear determination to meet children's needs by offering them attractive, informal surroundings in keeping with the latest developments in teaching methods. One such example is the small school in Chenebier, eastern France, which caters for children from several surrounding villages. It is designed to be a lively, pleasant school but also one that offers scope for a whole range of different learning environments.

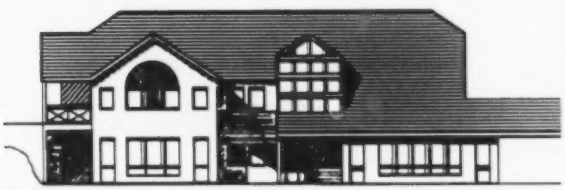
Lontzen-Herbesthal School

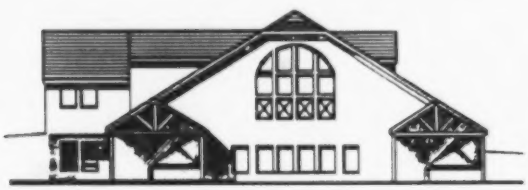


1. classrooms
2. quiet play
3. theatre
4. documentation centre



Chenebier School: nursery-school courtyard

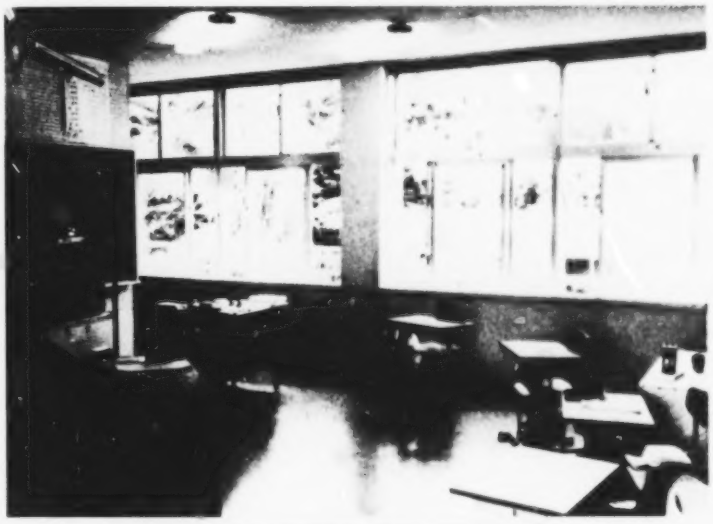


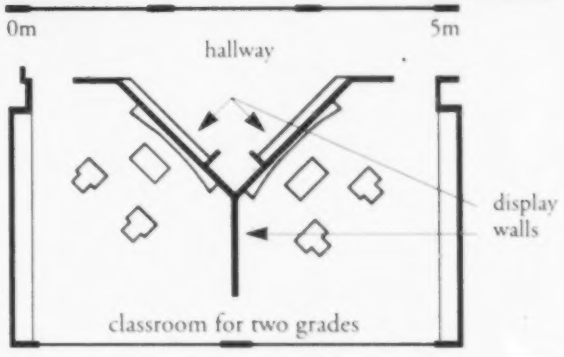


Chenebier School facades
Above: south facade, school entrance
Below: east facade

In order to provide the largest variety of learning environments possible, and the greatest scope of use of the small rural schools' facilities, authorities in Japan have been making efforts to provide schools with multi-use and flexible spaces. Movable partitions are part of their strategy for increasing flexibility. Increased variety in learning environments is facilitated by original forms and layouts of classrooms, as shown by the plan below of one of the classrooms at the Aka primary school in Okinama Prefecture.

Large and sophisticated school complexes are also being built, as in the Marne *département* of France. They all have their own individual features but clearly demonstrate the same aims, namely to create in a rural setting a school that is large enough for pupils to have access to all the requisite educational facilities as well as the ancillary services that are increasingly coming to be expected by people living in a rural area, but working in cities or towns. This means creating in the countryside educational facilities that have the advantages of a rural school together with the features that many families look for in an urban school. The school built in Ville-en-Tardenois provides a good example of this (see box).





PROJECT FOR A SCHOOL COMPLEX IN VILLE-EN-TARDENOIS AND CHAUMUZY

RATIONALE

The District Authority's objective is... to pursue the efforts to modernise and enhance its educational facilities so as to provide an environment more suited to modern teaching methods.

It has therefore decided to improve these facilities in such a way as to permit:

- teamwork and specialist teaching;
- combined-class teaching and activities;
- the installation of special equipment for pupil activities (sport, technology, arts and crafts, etc.).

Another reason behind the project is the urgent need to cater for a changing rural population.

The latest censuses show that rural lifestyles are altering, mainly because of employment trends in the countryside.

A comparison of 1975 and 1990 census data for the 15 communes in the area shows that there has been a sharp rise in female employment and in the number of people commuting to a workplace outside the district.

[...]

What has therefore to be borne in mind is the situation of parents who are obliged to commute every day and find schools nearer their place of work which have more daycare and other facilities, as most urban schools do.

What is happening is that, alongside a "core" population of farmers and wine-growers, there is now a population of commuters, less attached to community life and far more mobile (25 per cent of those living here in 1990 were living elsewhere at the time of the 1982 census), and these people need to be more effectively integrated into the community by providing them with better services (school meals and daycare) in the local schools.

[...]

[The new school complex] will comprise:

- 5 classrooms 250 m2,
- 1 workshop 48 m2,
- 1 library 74 m2,
- 1 computer room 63 m2,
- 1 multi-purpose room 68 m2,
- 1 headteacher's office 14 m2,
- 1 meeting room 14 m2,
- 1 dining room 192 m2.

Given the magnitude of the project, estimated at 10 497 128 FF inclusive of tax, of which 1 257 688 FF will be for access roads, the District is also counting on a grant from the Marne *département.*

It is worth re-emphasizing the advantages of a single school site serving all ten different communes:

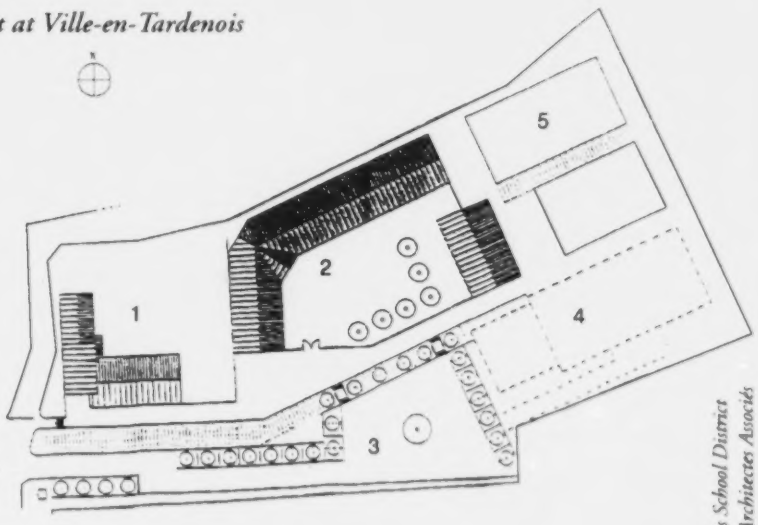
- extra equipment and facilities to allow the use of new teaching methods;
- easier school transport arrangements (one destination);
- shared canteen facilities for nursery and primary pupils.

Source: Ville-en-Tardenois District

This is an ambitious project, encompassing three nursery and five primary classes on a single site. It has involved substantial extensions to an existing building and a total outlay of almost 8 million francs excluding tax. This gives an idea of what a determined attitude all the communes concerned needed to bring a project of this type to fruition. What is more, in this particular case, school policy has become the responsibility of an intercommunal entity, the District.

However, this is not an isolated example since a school complex of a similar size has been built at Grauves in the same *département*, this time at the instigation of an intercommunal school association.

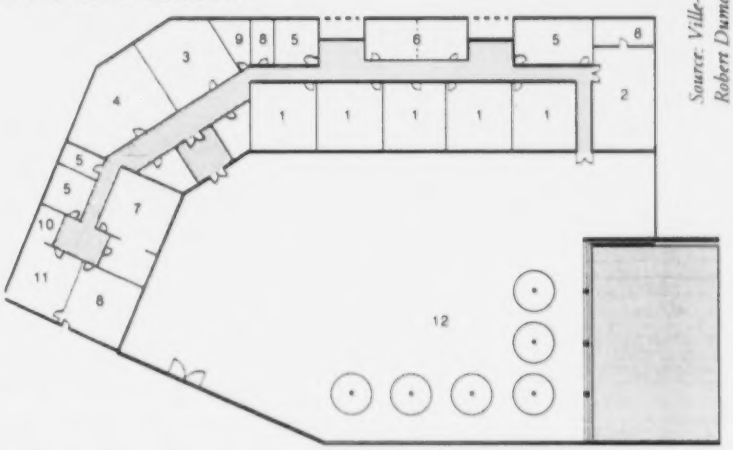
School-complex project at Ville-en-Tardenois



1. existing nursery school
2. elementary-school project
3. future bus and car park
4. future gymnasium and changing rooms
5. future outdoor sports area for school and non-school use

Source: Ville-en-Tardenois School District Robert Dumont Blébaut Architectes Associés

Elementary-school project at Ville-en-Tardenois



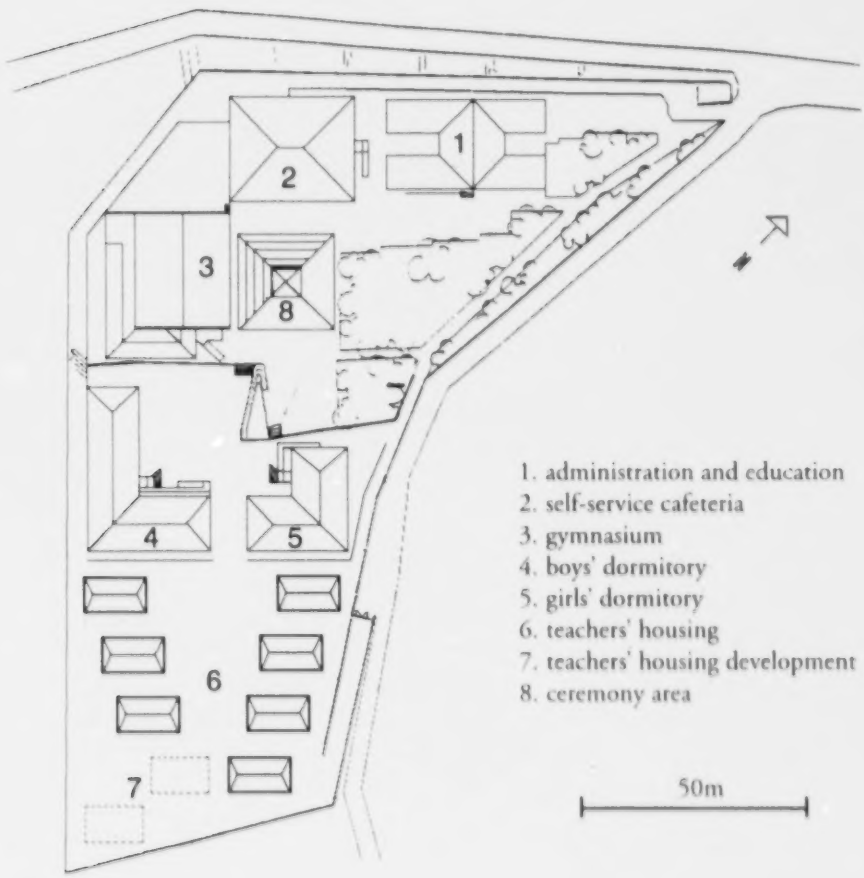
1. classrooms
2. multi-use room
3. informatics
4. library
5. WC
6. workshops
7. cafeteria
8. storage
9. nurse's station
10. laundry
11. kitchen
12. courtyard for play

Plans for much larger school complexes have been drawn up for the remoter areas of Turkey. One is the regional school in Pülümür, with its own boarding facilities for pupils and accommodation for teachers.

All these examples show how determined rural communes are to adapt to the current demands of the new rural population and to new developments in the area of education.

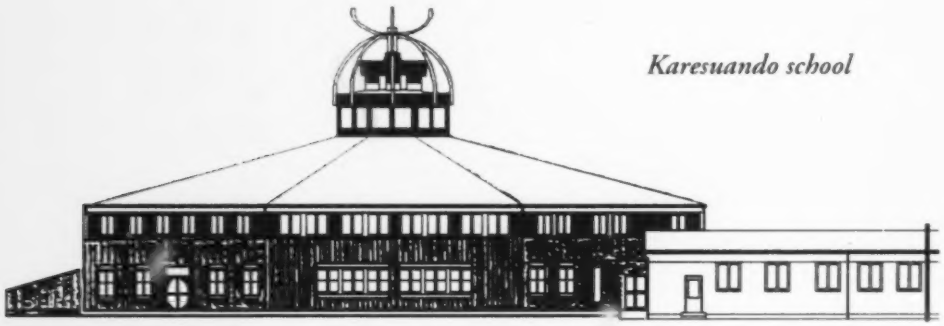
Equally noteworthy is the work being put into designing schools which interface with the local community and serve the population as a whole. The school in Karesuando, in the far north of Sweden, is a particularly good example of this. The school is an old one, built in 1920 and extended in the early 1960s. It caters for children from nursery age through to the end of their secondary education.

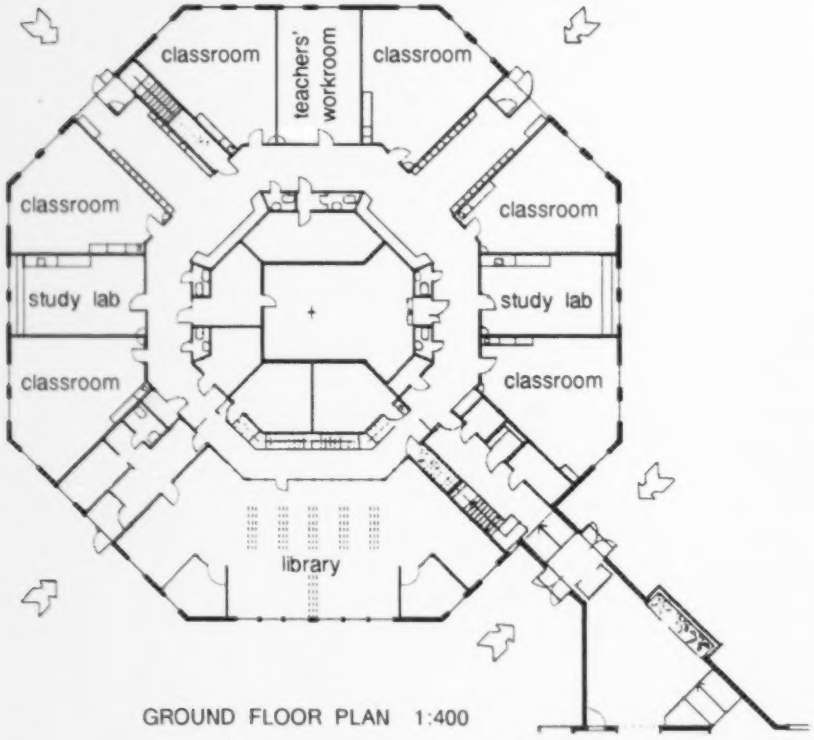
The Pülümür Regional Boarding School



In 1991, it was decided to extend the existing premises by adding a two-storey, octagonal building containing classrooms and a library. The irregular-shaped classrooms are all equipped with large tables and computers. Colours and materials are distinctly modern, while the main hall is reminiscent of a traditional Lapp hut with a central open fireplace. During the school holidays the main hall, the library, two adjoining classrooms and the kitchens are used for a range of activities including exhibitions, sales and lectures.

Karesuando school





GROUND FLOOR PLAN 1:400

30

Families are becoming increasingly demanding of rural schools and expecting the same services as those found in urban schools. When construction or restructuring work is planned, these increased demands are leading to the design of sophisticated school complexes, which go further to meet new pedagogical needs and often include a resource centre, access to computers, social spaces for playing or relaxing, a welcome area and catering facilities.

At the same time, the school buildings are being designed to facilitate contacts with outside bodies, and adult access to services provided by the school, while making sure that this will not be detrimental to either the children's education or the use of facilities outside school hours.

The history of a region in terms of its education system is reflected in its school buildings. Current trends in Western Europe reflect a heightened resolve to adapt to local needs, and schools are no longer the typical, uniform buildings they used to be. But these are countries with a long history of education, where much of the spadework has already been done. Differentiation and refinements would appear to be part of a subsequent phase of development. Where there is an urgent need to provide education for children who have never been to school, this tends to lead to schools of a standardized and somewhat uniform design.

There is also the matter of the level at which decisions are taken and the powers of the authority responsible for the construction of schools. It is no coincidence that multifunctional buildings are to be found in a country like Sweden where all 286 communes exercise authority over not only education but other policy areas, including social affairs.

Nor is it surprising to find the greatest variety of school architecture in the more highly decentralised countries where the authorities responsible are much closer to the grassroots level. However, when the agency responsible is a small one, there would appear to be a need for advisory bodies. In Quebec, for instance, the provincial government publishes guidelines such as the "Guide d'aménagement de la cour d'école" (Guidelines on planning school playgrounds). In France too, the communes often consult primary school inspectors from the Education Ministry on such matters, and the authorities at *département* level also have experienced technical teams to provide advice and assistance.

Another concept that is gaining ground is adaptability. The rapid demographic changes in OECD countries — population movements, the resulting fragility of certain areas — are persuading planners to allow for potential change in utilisation right from the outset. By the time falling school rolls have led to the closure of a number of classes or even a whole school, new uses should already have been thought of for the premises. In Australia, for example, schools are often converted into housing, while in France quite a few have been transformed into multi-purpose village halls. When a school has to be built in a demographically vulnerable area, it is a good idea to make provision at the planning stage for its possible subsequent conversion to other uses, not only so that this should be technically feasible but also so as to accustom the local population to the idea.

On the other hand, in areas that are expanding, flexible, modular buildings are one way of coping with a potential rise in enrolment without putting too much strain on shared spaces; at the same time, they allow teachers to vary and adjust the size of their classes to the needs of different teaching and learning situations as they see fit.

1. Published by Groupe 71, 5 rue Beau Site, 71000 Macon, France.

CONCLUSIONS

Although there are signs that the rural world is experiencing some kind of identity crisis, which readily centres on the problem of the local school, OECD countries seem to be determined to provide pupils with an array of albeit diverse but nonetheless genuine solutions designed to meet the needs of today's pupils, and at the same time to consider the school as a factor in regional development and a means of providing rural areas with services over and above the school's intrinsic purpose (continuing education, cultural centre, various community services...).

However, one rural area varies considerably from the next: in terms of geographic and economic constraints, as well as in terms of the importance accorded to historical or sociological traditions, the actual situation and potential development. It thus becomes impossible to establish a norm for a "good rural educational infrastructure" or a model school. Nonetheless, some general points can be made to guide debate and planning:

- The organisation of the school infrastructure implies taking account of needs which are often contradictory :
  - — maintaining the social ties of the children with their village while developing relations with other children and introducing them to a more complex environment;
  - — meeting the pupils' educational and extra-curricular needs while controlling costs.
- It would seem necessary to consider school-organisation decisions in light of the academic future of the children on the one hand, and as part of a more general debate on the development of rural areas on the other hand.
- While the rural school is not responsible for all local development, it can however provide various services to the rural population and, as a result, participate in local development or renewal.
- In some regions it can be very difficult to forecast with relative certainty the medium-term education needs of the area, the major elements which will define business or industry success and the employment outlook. In consequence, adaptable rather than rigid constructions need to be designed.

Instead of proposals for a model system of organisation or a model school, what is becoming clearer is the need for precise and forward-looking consideration, at as close as possible to the site level, of the missions and objectives of each school group. This allows to establish a programme which answers needs and aspirations, takes into account the margins of uncertainty and plans for the unpredictable.

Today's constructions or renovations tend to follow this idea and, while giving greater importance to the children and their environment, attempt to take into account the qualitative and quantitative changes in society's demands for education, in the framework of flexible and adaptable buildings.

This assumes that educational objectives are clearly defined, that potential regional development has been considered and that local actors in the development process have been consulted and associated in planning.

In conclusion, rural educational policy must be formulated to take account of local development policies, while maintaining as a first priority the specific needs of the children.

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